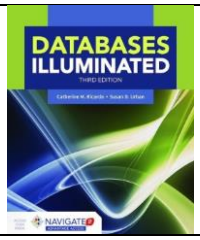
Digital & Information Technology
Houston Community College
http://www.hccs.edu

Course Syllabus

ITSE 1346 - Database Theory and Design

Instructor **Contact Information** **Office Hours**	**Name: Stephen Linkin** **Office**: Stafford By Appointment **Phone:** Call Department Office Best Contact is E-mail **e-mail** Stephen.linkin@hccs.edu **Course URL**: Canvas Eagle Online at https://hccs.instructure.com/login/ldap By Appointment		
Course Number & Title	ITSE 1346 - Database Theory and Design		
Course Reference Number (CRN)	15682		
Class Location/Times	**ON-LINE** **24/7 (instructor may not replay on weekends)**	**Course Contact Hours**	96
Instructional Methods	**On-Line/Distance Education**	**Credits 3**	4 (2 Lecture, 2 Lab)
Course Length (number of weeks)		16 weeks	
Class Web Page	This is an online class. Quizzes, Labs, Programming Assignment, email communication, and announcements will be conducted using **Canvas Eagle Online (Canvas EOL)**. Every student who is registered for online classes is granted access to the class through **Canvas EOL**. You're responsible for accessing class instructional material on Canvas EOL on a regular basis to keep up with course requirements.		
Course Description:	Introduction to the analysis and use of data requirements and organization using normalized tables.		
Course Prerequisite(s)	(COSC1436 or ITSE1402), (BCIS1405 or ITSC1309), MATH1314 and ENGL1301.		

Students Learning Outcomes (SLOs)	• Normalize data tables • Create entity-relationship models and diagrams • Design database tables with relationships • Create and update tables • Retrieve and maintain data
Required Instructional Materials: Textbook	 Databases Illuminated, Third Edition Authors: Catherine M. Ricardo, Susan Urban ISBN: 978-1-284-05694-5 Publisher: Jones & Bartlett Learning
Other Required Materials	1. Microsoft Access 2016 2. Microsoft Visio 2016 (Optional)
Optional Materials or References	None
Topics Covered	

Topic	Textbook Chapter
Database Concepts/Architecture	Chapters 1 & 2
Modeling	Chapters 3, 4 & 7
SQL	Chapter 5
Normalization	Chapter 6
Enhanced Models	Chapter 8
Data Security and Transaction Control	Chapters 9 & c10
Distributed Data	Chapters 12-15

Instructor Grading Criteria, Guidelines, and Policies

Grading Criteria

Item	Points
Average of 1st three tests and Semester Project	45%
Semester Lab Projects GRADED 0-100 Points	25%
Class Participation and Assignments PASS/FAIL	10%
Final Exam GRADED 0-100 Points	20%
TOTAL	100%

Final course grades are determined using the overall average score computed with the weights above and the HCC standard Grading scale below.

HCC Grading Scale

The HCC grading scale is:

Grade	GPA Points
A = 100%-90%	4 points per semester hour
B = 89%-80%	3 points per semester hour
C = 79%-70%	2 points per semester hour
D = 69%-60%	1 points per semester hour
F = 59%-0%	0 points per semester hour
FX (Failed due to lack of participation)	0 points per semester hour
IP (In Progress)	0 points per semester hour
W(Withdrawn)	0 points per semester hour
I (Incomplete)	0 points per semester hour
AUD (Audit)	0 points per semester hour

	IP (In Progress) is given only in certain developmental courses. The student must re-enroll to receive credit. COM (Completed) is given in non-credit and continuing education courses. To compute grade point average (GPA), divide the total grade points by the total number of semester hours attempted. The grades "IP," "COM" and "I" do not affect GPA. Receiving a grade of FX may affect student's financial aid.
Course Requirements and Expectations	**Final Exam: The final exam will be administered on campus**. It will be closed-book, closed-notes and comprehensive. The Final Exam date, time, and location will be posted on Canvas EOL as soon as the information becomes available (expect it to be close to the Final Exam week). **Other Major Exams:** On- Line During Designated times **Lab Assignments:** On or Before Designated Due Date **Project Assignment:** Will be submitted by the team leader on HCCS Webmail as a zipped Archive to be presented in person by the team on the designated date.
Make-up Policy for Exams and Assignments	• No Make-up Exams
Grade Dispute Policy	• Instructor will review any disputed grade with the student
Communication with Instructor	The best way to contact me is through Canvas Inbox. In case Canvas is not accessible, use my HCC e-mail address xxx.xxxxxxx@hccs.edu. Canvas also allows you to automatically redirect your Canvas Inbox email to another e-mail account. Direct email must originate in HCCS webmail All class announcements will be posted on Canvas EagleOnline. Except as directed
HCC Resources	Schedules of tutoring labs at various HCC campus locations will be posted on Canvas EOL.
Technical Issues	• This course requires the use of various technologies. If you have a technical problem with your MyHCC account, you should contact HCC technical support at: 713.718.8800 • Technical issues with **Canvas EagleOnline** should be reported to HCC-Online Technical Support. They are available 24/7 and their contact information can be found at: http://www.hccs.edu/online/technical-support/

HCC System Policies For detailed information see Student Handbook at http://www.hccs.edu/resources-for/current-students/student-handbook/ For online classes see also the online student handbook at https://learning.hccs.edu/faculty/daejan.grigsby/hcc-online-student-handbook	
HCC Policy on Class Attendance	Students are expected to attend class meetings on a regular basis and to participate in class and online activities. Students may be withdrawn administratively if they don't meet the State mandated attendance policy. You are responsible for materials covered during your absences. Class attendance is checked daily. Although it is your responsibility to drop a course for nonattendance, the instructor has the authority to drop you for excessive absences. For complete information regarding Houston Community College's policies on attendance, please refer to the HCC Student Handbook.
HCC Policy on Course Withdrawal	If you feel that you cannot complete this course, you will need to withdraw from the course prior to the final date of ****, 2019 (check HCCS Academic Calendar for any updates). Students must withdraw by the withdrawal deadline in order to receive a "W" on a transcript. Final withdrawal deadlines vary each semester and/or depending on class length, please visit the online Academic Calendar, any HCC Registration Office, or any HCC advisor to determine class withdrawal deadlines. Be certain you understand HCC policies about dropping a course and consult with a counselor/advisor to determine if withdrawing is in your best interest. It is your responsibility to withdraw officially from a class and prevent an "F" from appearing on your transcript. Senate Bill 1231 and limits the number of W's a student can have to 6 classes over the course of their entire academic career. This policy is effective for students entering higher education for the first time in fall 2007 and subsequent terms. Withdrawals accumulated at any other Texas public higher education institution count toward the 6 course total. Withdrawals for certain circumstances beyond the students control may not be counted toward the 6-drop limit. In addition, withdrawing from a course may impact your financial aid award or eligibility. Contact the Financial Aid Office or website to learn more about the impact of withdrawing on financial aid. For complete information on HCC

	Course Withdrawal policy including the three-peat rule refer to the HCC Student Handbook.
HCC Policy on Students Living Out of The HCC Service Area	Students living out of the HCC service area during the semester in which they are enrolled at HCC in online classes need to make special arrangements to accommodate their needs. In the event the course requires onsite exams, it is the student's responsibility to obtain a proctor. This proctor must be someone in the testing center at a local community college or at a university. The proctor will need to provide a secure testing environment and possibly (depending on the course) a computer with Internet access. A valid picture ID must be presented to the proctor when taking the exam. All fees associated with proctoring are the responsibility of the student. Exams will be sent via fax, email, or US mail directly to the proctor with instructions for administering the exams. This will be done at no cost to the student; however, the student WILL BE responsible for fees associated with returning the exams (including costs of overnight express, etc. to meet deadlines). The proctor approval form MUST be completed and approved at least 2 weeks prior to the first scheduled exam. The proctor approval form is located on the HCC Online Testing website at: http://www.hccs.edu/online/testing--tutoring/ For additional questions, you may contact us at hcc.online@hccs.edu .
HCC Policy Statement on Academic Honesty	A student who is academically dishonest is, by definition, not showing that the coursework has been learned, and that student is claiming an advantage not available to other students. The instructor is responsible for measuring each student's individual achievements and also for ensuring that all students compete on a level playing field. Thus, in our system, the instructor has teaching, grading, and enforcement roles. You are expected to be familiar with the University's Policy on Academic Honesty, found in the catalog. What that means is: If you are charged with an offense, pleading ignorance of the rules will not help you. Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Penalties and/or disciplinary proceedings may be initiated by College System officials against a student accused of scholastic dishonesty. "Scholastic dishonesty": includes, but is not limited to, cheating on a test, plagiarism, and collusion. For more information on HCC policy on academic honesty refer to the HCC Student Handbook.

HCC Policy Statement--Accommodations Due to a Qualified Disability	HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please meet with a campus Abilities Counselor as soon as possible in order to establish reasonable accommodations. Reasonable accommodations are established through an interactive process between you, your instructor(s) and Ability Services. It is the policy and practice of HCC to create inclusive and accessible learning environments consistent with federal and state law. For more information, please go to http://www.hccs.edu/support-services/disability-services/
HCC Policy Statement--Title IX	Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status-in educational programs and activities. If you require an accommodation due to pregnancy please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to: *David Cross* *Director EEO/Compliance* *Office of Institutional Equity & Diversity* *3100 Main* *(713) 718-8271* *Houston, TX 77266-7517 or Institutional.Equity@hccs.edu*
HCC Policy Statement—Campus Carry	At HCC the safety of our students, staff, and faculty is our first priority. As of August 1, 2017, Houston Community College is subject to the Campus Carry Law (SB11 2015). For more information, visit the HCC Campus Carry web page at http://www.hccs.edu/departments/police/campus-carry/.
HCC Policy Statement—Vaccination against bacterial meningitis	Texas Senate Bill 1107, passed in May 2011, requires that new HCC students and former HCC students returning after an absence of at least one fall or spring semester who are under the age of 22 are required to present a physician-signed certificate showing they have been vaccinated against bacterial meningitis. For more information and the list of exemptions, please visit the HCC page at: http://www.hccs.edu/applying-and-paying/meningitis/

EGLS3 -- Evaluation for Greater Learning Student Survey System	At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and division chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term.

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Course Calendar

Date	Time	Event
Jan 5		Saturday Registration
Jan 11		Last Day for 100% refund
Jan 12		Saturday Registration
Jan 14		Reg 16-Wk Classes Begin
Jan 21		Martin Luther King,Jr. -Observance
Jan 28		Official Day of Record
Jan 30		Last Day for 70% refund
Feb 5		Last Day for 25% refund
Feb 18		President's Day
Mar 11 Mar 17		Spring Break
Apr 1	4:00 {M	Last day to withdraw
Apr 19 Apr 19		Easter Spring Holiday
May 5		Last day of instruction
May 12		Semester Ends
May 27		Memorial Day

Student Assignm

Wk.	Cut Off Date	*Topic(s)*
	1/20	**Introduction:** Orientation, and e-mail Practice (Failure to complet Orientation will result in and automatic drop
1.	**1/27**	**Zipping-** Learning how to Compress and send Files for assignments. **Chapter 1**- Introductory Database Concepts: Why Use a Database? What is a Database Processing System? Ho to Build a Database. History of Database Processing **Assignment #1:** Following the instructions on the "Course Items" Web site for LAB 1, Place the files in a Zip File, then send it to me as an attachment via e-mail. ***(To get your points it must work on the first try) Practice by sending it to yourself***

2.	**2/3**	**Chapter 2-** - Database Planning and Architecture: Data as a resource, The Characteristics of Data, Stages in Databas Design, Design tools, Database Administration, Three Level Architecture, Database Models **Analysis –** Learning to analyze a problem and create a plan for a project **Assignment #2:** Following the instructions on the "Course Items" Web site, for LAB 2, Place the files in a Zip File, then send it to me as an attachment via e-mail.
3.	**Self Paced**	**Chapter 3-** The Entity Relationship Model: Understand the Purpose of the ER Model, identify and define Entities and their Attributes, Select Keys, understand and define Relationships **Chapter 4- The Relational Model** Advantages of Relational Modes, Data Structures, Integrity constraints, Schemas, SQL and sub Languages, Views, mapping schemas.
4.	**2/10/19**	**On-Line Test #1** **Available 2/6/19**
5.	**2/17**	**Chapter 5-: Relational DBMSs and SQL** History of SQL and DBMSs; the Architecture of a relational system, SQL its DDL and DML. Processing Active Databases with Commit and Rollback. Programming in SQL **Chapter 6 - Normalization** Why Normalize, the Normal Forms. The Anomaly classes, Functional Dependencies, More About KEYS, and Decomposition. The Normalization Process, and when to stop **Assignment #3:** Following the instructions on the "Course Items" Web site, for LAB 3, Place the files in a Zip File, then send it to me as an attachment via e-mail. **REVIEW ACCESS**

6.	**Self Paced**	**Chapter 7- The Object Oriented Model** Rational for this model, Object Oriented Data Concepts. Data modeling with UML; OMG and DDL an Object query language, Developing OO Databases.
7.	**2/24**	**Chapter 8- 8. The Enhanced ER Model and Object-Relational Model** Rationale for Extending the ER Model, Generalization and Specialization. The Union construct, Using (min, max) Notation fo Cardinality and Participation. Mapping the EE-R Model to a Relational Model. Extending the Relational Model, and Convertin an EE-R Diagram to an Object-Relational Database Model **Assignment #4:** Following the instructions on the "Course Items" Web site, for LAB 4, Place the files in a Zip File, then send it to me as an attachment via e-mail.
8.	**3/10/19**	**On-Line Test #2 (Mid-Term)** **Available 3/6/19**
9.	**3/18/19**	**Project Team Assignments:** Application Development
10	**Self Paced Before Prfoject**	**Chapter 9- Introduction to Database Security** Issues in Database Security, Physical Security and User Authentication. Using Views for Access Control. Security Logs and Audit Trails. Data Encryption and SQL Authorization Language. Statistical Database Security and the Internet. **Assignment #5:** Following the instructions on the "Course Items" Web site, for LAB 5, Place the files in a Zip File, then send it to me as an attachment via e-mail.

11	Self Paced	**Chapter 10 - Transaction Management** Properties of Transactions and the need for Concurrency Control. Techniques for management. Why we need Recovery and some Techniques **Chapter 11- 11. Relational Query Optimization** Query Processing and Optimization. Some Algebraic Techniques for Transformation. Processing Techniques and Cost Estimation, Pipelining
12	Self Paced	**Chapter 12- Distributed Databases** Rationale for Distribution. The Architectures for a Distributed System. Components of a Distributed Database System. Determining Data Placement, Transparency. The need for Transaction Control with Distributed Databases. Distributed Query Processing
13	Self Paced	**Chapter 13- Databases and the Internet** Fundamental Concepts of the Internet and the World Wide Web. The Tiered Architectures. Web Programming. The Semi-Structure Data Model. XML and Relational Databases **Chapter 14- Social and Ethical Issues** Computerization and Society. Intellectual Property laws. Databases and Privacy Issues, the Human Factors
14	4/7/19	**On-Line Test #3** **Available 4/3/19**
15	Self-Paced	**Chapter 15-Data Warehouses and Data Mining** Origins of Data Warehouses. Operational Databases vs. Data Warehouses. The Architecture of a Data Warehouse. Developing Data Warehouse and the Models used. Data Warehouse Queries and SQL. Optimization and Index Techniques. Views and View Materialization. The process of Data Mining. Purpose of Data Mining Models and Methods Used

16	4/27/19	Team Project Presentations (ON SITE) Submission of material by Midnight 4/26/19
	5/3/19 5/4/19	Final Exam (PROCTORED ON SITE)